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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/731,031
Filing Date: December 10, 2003
Appellant(s): SASAKI ET AL.

James A. Oliff Reg. No. 27,075 and Leana Levin Reg. No. 51,939
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 03/19/2008 appealing from the Office action mailed 09/12/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,893,649	Sasaki et al.	5-2005
2003/0044370 A1	Sasaki et al.	3-2003

2003/0023021 A1 Sakuma 1-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-16 and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Sasaki et al. (US 2003/0044370).

Sasaki teaches a resin powder (including co-styrene-acrylate polymer) for dermatological compositions (including antiperspirants) and methods to make the composition (including emulsion polymerization). See [001], [002], [0039], [0052]-[0055]. Regarding claims 1,15, 18-20, the phrase "wherein the particles have a degree of hydrophobicity of from 10% to 60 %" is met because it is inherent that since the particles are composed of the same polymers they will also have the same hydrophobicity. Regarding claims 1,5,15,18-20, the equation limitation is met by the Sasaki patent since it teaches the same composition and polymer resin (including the same MW) with the same SF1 values, the same particle average volume and the same surfaceness index, the burden is shifted to the applicants to show that the particles in patent pub. 2003/0044370 are not the same shape as applicants. See abstr, [0021] lin 1-4, [0025],[0031],[0038]. Besides the above remarks the Sasaki application teaches that particles with an SF1 of less than 110 are spherical with good spreadability but have inefficient affinity to skin, and particles with an SF1 above140 have unevenness on the surface of the resin, which improves skin adhesion, but spreadability becomes insufficient. See [0027] and [0028]. Thus it is inherent that the patent teaches the same dimensions as those claimed by the applicant since the surface area claimed is the

same and the application teaches a non-spherical particle in which the dimensions of a,b,c in applicants application can fall within the range of the claimed SF1 values and volume of the particle in 2003/0044. Regarding claims 15-16, the Sasaki reference teaches a process to make the particles comprised of emulsion polymerization and further adding a coagulant to agglomerate the resin particles until the intended particle size was formed. Then by heating the particles to the glass transition temperature the agglomerated particles are untied by fusion. See [0054]. Regarding claims 8-9 Sasaki teaches the Tg temperature within the range specified by applicants, See [0040] lin 1-2. Regarding claim 14, Sasaki teaches fine particles can be adhered to the surface of the particles, See [0056] lin 1-2. Regarding claim 19, Sasaki teaches that the resin powder can take the form of an emulsion. See [0050].

Claims 1-16 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Sasaki et al. (US 6,893,649).

Sasaki teaches a solid powder cosmetic and the method to produce it, comprising a spherical resin powder (specifically mentioned co-styrene-acrylate within the MW of applicants claim) and an oily component, the resin has the same SF1 values, the same particle average volume and the same surfaceness index as the applicants claimed invention. See col 2 lin 48-59, col 4 lin 28-29, lin 40-42, lin 49-50 and lin 63, col 5 lin 8, col 6 lin 40, col 7 lin 35-55. Regarding claims 1,15, 18-20, the phrase “wherein the particles have a degree of hydrophobicity of from 10% to 60 %” is met because it is inherent that since the particles are composed of the same polymers they will also have the same hydrophobicity. Regarding claims 1,5,15,18-20, the equation limitation is met

by the Sasaki patent since it teaches the same composition and polymer resin (including the same MW) with the same SF1 values, the same particle average volume and the same surfaceness index, the burden is shifted to the applicants to show that the particles in patent 6,893,649 are not the same shape as applicants. Also Sasaki teaches that particles with an SF1 of less than 110 are spherical with good spreadability but inefficient affinity to skin, and particles with an SF1 above140 have unevenness on the surface of the resin, which improves skin adhesion, but spreadability becomes insufficient. See col 4 lin 65-col 5 lin 13. Thus it is inherent that the patent teaches the same dimensions as those claimed by the applicant since the surface area claimed is the same and the patent teaches a non-spherical particle in which the dimensions of a,b,c in applicants application can fall within the range of the claimed SF1 values and volume of the particle in 6,893,649. Regarding claims 15-16, the Sasaki reference teaches a process to make the particles comprised of emulsion polymerization and further adding a coagulant to agglomerate the resin particles until the intended particle size was formed. Then by heating the particles to the glass transition temperature the agglomerated particles are untied by fusion. See col 7 lin 32-col 9 lin 28. Regarding claims 8-9 Sasaki teaches the Tg temperature within the range specified by applicants, See abstr and col 4 lin 40-45. Regarding claim 14 Sasaki teaches fine particles (corpuscles) can be adhered to the surface of the particles, See col 8 lin 65- col 9 lin 1-2.

Claims 1-16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. (US 2003/0044370) in view of Sakuma (US 2003/0023021 A1).

Sasaki discloses a resin powder (including co-styrene-acrylate polymer) for dermatological compositions (including antiperspirants) and methods to make the composition (including emulsion polymerization). See [001], [002], [0039], [0052]-[0055]. Regarding claims 1,15, 18-20, the phrase "wherein the particles have a degree of hydrophobicity of from 10% to 60 %" it is obvious that since the particles are composed of the same polymers they will have the same hydrophobicity. Regarding claims 1,5,15,18-20, the equation limitation is met by the Sasaki patent since it is obvious that the dimensions of a, b and c for the particles disclosed in Sasaki are in the range of applicants currently claimed invention since it discloses the same composition and polymer resin (including the same MW) with the same SF1 values, the same particle average volume and the same surfaceness index. See abstr, [0021] lin 1-4, [0025],[0031],[0038]. Besides the above the Sasaki application discloses that particles with an SF1 of less than 110 are spherical with good spreadability but have inefficient affinity to skin, and particles with an SF1 above 140 have unevenness on the surface of the resin, which improves skin adhesion, but spreadability becomes insufficient, therefore it is obvious that someone skilled in the art would experiment with different dimensions of the particle in order to have the best combination of spreadability and affinity to the skin. See [0027] and [0028]. Thus it is obvious that Sasaki discloses the same dimensions as those claimed by the applicant since the surface area claimed is

the same and the application discloses a non-spherical particle in which the dimensions of a,b,c in applicants application are within the range of the claimed SF1 values and volume of the particle in the patent. Regarding claims 8-9 Sasaki discloses the Tg temperature within the range specified by applicants, See [0040] lin 1-2. Regarding claim 14, Sasaki discloses that fine particles can be adhered to the surface of the particles, See [0056] lin 1-2. Regarding claim 19, Sasaki discloses that the resin powder can take the form of an emulsion. See [0050].

Sasaki does not disclose reshaping the particles by flattening the particles by colliding the particles against a uniform plane under high pressure.

Sakuma discloses resin particles and the process for producing the same. The resin particles were disclosed as useful in many applications including cosmetics. See [0001]. Sakuma discloses that in order to make the particle diameter of the particles a high pressure dispensing machine such as a nanomizer to crash the particles against the vessel wall would be advantageous. See [0073]

It would have been obvious to a person of ordinary skill in the art at the time the claimed invention was made to combine the art described in the documents above because Sasaki discloses all of applicants claimed invention except for the step of subjecting the particles to a reshaping treatment involving crashing particles against a vessel wall while Sakuma discloses that resin particles reshaped by instruments such as nanomizers was already well known in the art at the time of the invention The motivation to combine the above documents would be a resin powder shaped by a nanomizer in order to form a desirable particle dimension with an even distribution of

the shaped particles that would have improved skin adhesion and spreadability. Thus, the claimed invention, taken as a whole was *prima facie* obvious over the combined teachings of the prior art.

(10) Response to Argument

A.

1.

Appellants assert that the allegation that a,b and c are dependent upon SF1 is factually an error because the dimensions of b/a and c/b cannot be specified or predicted by a given shape factor value (SF1). Appellants state that SF1 is independent from the dimensions b/a and c/b.

The examiner respectfully disagrees with the above argument by appellants. Firstly the SF1 factor claimed by appellants and disclosed within Sasaki are the same, 110-140, SF1 factors are determined by the following equation as claimed by appellants:

$SF1 = (ML^2/A) \times (\pi/4) \times 100$

Where ML is the maximum length and A represents area. Since it appears appellants invention is drawn to a rugby ball or elliptical shaped particle it would be closest to an ellipsoid in shape. The area of an ellipsoid can be calculated by the equation below:

$$A = 2\pi\left(c^2 + b\sqrt{a^2 - c^2}E(\varphi, m) + \frac{bc^2}{\sqrt{a^2 - c^2}}F(\varphi, m)\right),$$

Clearly to calculate the area above all of the Cartesian coordinates a,b and c are expressed in the equation. Therefore SF1 is clearly dependent upon a,b and c and the Cartesian coordinates are of course dependent upon SF1. Thus it is inherent that the Sasaki references teach the same dimensions as those claimed by the appellant since the surface area claimed is the same and the application teaches a non-spherical particle in which the dimensions of a,b,c in appellants application can fall within the range of the claimed SF1 values and volume of the particle described in the Sasaki references. Secondly from the limitation within claim 2 of appellants current claim set it would appear that any SF1 value within 110 to 140 would satisfy all of the limitations of independent claim 1. Thirdly the product by process limitations within claims 1,18-20 and the process limitation within claim 15 that the particles have undergone a reshaping treatment is not seen as being particularly limiting by the examiner; thus the emulsion and agglomeration methods described by the Sasaki references would read on such a broad process to make the resin. The Sasaki references clearly teach an emulsion polymerization and agglomeration method that includes stirring and heating, stirring is considered a reshaping treatment since it is inherent that stirring with a magnetic stir bar or homogenizer would lead to a particle shaped by the applied physical forces. Thus since the product by process type of limitations and the process claims broad limitation of “reshaping treatment” is within the scope of the the Sasaki references any particle made from such a process would inherently have the same properties including the dimensions of the particle. Applicants have not narrowed the breadth of the claim limitations on the process to produce the

resins within their currently claimed invention to preclude the processes taught within the Sasaki references.

2.

Appellants assert that the examiners assertion that the first declaration under 37 C.F.R as irrelevant is in error. Appellants assert the declaration provides evidence as shown in table 1 that the particles of resin powders as formed in accordance with the teachings of Sasaki '370 and '649 exhibit b/a=1 and c/b=1. Appellants surmise that since the claimed ratios of a,b and c are outside the range of their claimed invention the Sasaki references cannot be said to inherently achieve the b/a and c/b ratios based upon SF1 values.

The examiner respectfully disagrees with the above argument by appellants. The First Affidavit under 37 CFR 1.132 filed 12/15/2006 is insufficient to overcome the rejection of claims over the Sasaki references based upon the arguments as set forth above because: The evidence as filed only shows a vary narrow interpretation of the Sasaki reference. Specifically the affidavit only shows one working example each from Sasaki et al. (US 2003/0044370) (SFI of 112) and Sasaki et al. (US 6,893,649) (SF1 of 115). The examples within the Sasaki references were given solely for the purpose of illustration and were not to be construed as being limiting to their invention since many variations are possible without departing from the spirit and scope of the invention. The only evidence shown by the affidavit that is considered persuasive is that a particle with an SF1 of 112 and 115 would not satisfy the equation of claim 1 which is to be expected since both the Sasaki references clearly state that a particle with an SF1 of less than

110 are spherical, thus it is not surprising that b/a=1 and c/b=1 since the dimensions of a sphere would be uniform. However the Sasaki references clearly teach that non-spherical particles can have an SF1 between 110 and 140, preferably 130 or 120, in which the dimensions of a,b,c in appellants application can fall within the range of the claimed SF1 and volume of the particles in Sasaki.

3.

Appellants assert that examiner has not provided a rationale or extrinsic evidence showing inherency. Appellants assert that the examiner has not provided a factual basis or technical reasoning to reasonably support the allegation that b/a and c/b values claimed are always and necessarily satisfied by the references.

The examiner respectfully disagrees with the above argument by appellants. As already described above in the remarks by the examiner for argument 1 by appellants there are at least 3 reasons why the examiner concluded that the Sasaki references inherently teach appellants claimed particle. 1) SF1 as shown above is clearly dependent upon a,b and c and the Cartesian coordinates are of course dependent upon SF1. 2) The limitation within dependent claim 2 of appellants current claim set apparently suggest that any SF1 value within 110 to 140 would satisfy all of the limitations of independent claim 1. 3) The emulsion and agglomeration methods taught by the Sasaki references would anticipate the broad product by process or process limitations within the claims to produce the resin by reshaping treatment.

4.

Appellants assert that the examiners assertion that the second declaration under 37 C.F.R as irrelevant is in error. Appellants assert Table 1 and Table 2 clearly show that the b/a and c/b ratios for the Sasaki references are outside of their claimed range. Appellants further assert that the comparative examples in tables 1 and 2 clearly show that a particle may have a SF1 value in a range of 110 to 140 and still fail to satisfy the required equations for the ratios of a,b and c. Appellants assert this is evidence that the values of a,b and c are not inherent to the particles of the Sasaki references.

The second declaration under 37 CFR 1.132 filed 07/05/2007 is insufficient to overcome the rejection of claims 1-16 and 18 based upon Sasaki et al. (US 6,893,649, '649 from hereon) and (US 2003/0044370, '370 from heron) because: appellants declaration only shows a narrow interpretation of the Sasaki references taken from only one example of each reference, the examples within the Sasaki references were given solely for the purpose of illustration and were not to be construed as being limiting to their invention since many variations are possible without departing from the spirit and scope of the invention. Furthermore it appears as though appellants have consciously selected to show only examples from the Sasaki references which are spherical in nature when clearly the references disclose that spherical particles are not the only embodiment and are not even preferred. The Sasaki references each teach that particles with an SF1 of less than 110 are spherical with good spreadability but have inefficient affinity to skin, and particles with an SF1 above 140 have unevenness on the surface of the resin, which improves skin adhesion, but spreadability becomes insufficient. See [0027] and [0028] of '370 and col 4 lin 65-col 5 lin 13 of '649.

Appellants affidavit only shows particles that are essentially spherical in nature (a=b=c), when clearly this is not the only embodiment of the Sasaki references both of which actually teaches the disadvantages of such essentially spherical particles.

B.

Appellants assert that Sakuma does not remedy the deficiencies of Sasaki et al. '370 with respect to the particle dimensions. Appellants further state that while Sakuma does teach shaping particles Sakuma teaches away from the particles defined by appellants. Appellant's state that their particles are elliptical shaped similar to a rugby ball, while Sakuma teaches particles with a boundary line which are shaped differently from the particles of the present application.

The examiner respectfully disagrees with the above argument by appellants. As currently claimed appellants do not claim an elliptical or "rugby-shaped particle" so whether or not Sakuma teaches these shapes would appear to be moot. Besides the above remark the figures within Sukuma show several particles which are elliptical in shape, even though they do have a boundary-line, which is not precluded from appellant's claims. Sakuma was only combined with '370 to show that it was obvious to use high pressure dispensing machine such as a nanomizer to crash particles against a vessel wall. As described in the office action filed 03/08/2007 it would have been obvious to someone of ordinary skill in the art at the time of appellants claimed invention to process the particles disclosed within '370 with the nanomizer described within Sakuma. Since the particles of Sakuma are processed in the same manner disclosed by

appellants it is obvious that the particles formed by combining '370 and Sakuma would have the same dimensions as currently claimed by appellants.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

James William Rogers, Ph.D.

/James W Rogers, Ph.D./

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